DRINKING WATER SURVEILLANCE

PROGRAM

1998-1999

EXECUTIVE SUMMARY REPORT

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
AJAX WATER PLANT
1998 AND 1999 REPORT

The Ajax Water Plant (old) was replaced by a new facility which was commissioned in March 1999. The new plant, located adjacent to the old site treats water from Lake Ontario. The new facility includes a new intake and low lift structure with zebra mussel control, several pretreatment processes, direct filtration with coagulation, flocculation, filtration, disinfection and fluoridation. This plant has a design capacity of 163.000 x 1000 m^3/day and serves a population of approximately 140,000.

Raw and treated water at the old plant and at one location in the distribution system was sampled in 1998. A total of 687 tests were performed on up to 200 inorganic, organic and radiological parameters.

Raw and treated water at the new plant and at one location in the distribution system was sampled in 1999. A total of 879 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Ajax Water Plant (old), for the sample year 1998, produced good quality water and this was maintained in the distribution system.

The Ajax Water Plant (new), for the sample year 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
ALEXANDRIA WATER PLANT
1998 AND 1999 REPORT

The Alexandria Water Plant is a conventional treatment plant which treats water from Mill Lake. The process consists of coagulation, flocculation, sedimentation, filtration, and disinfection. Powder activated carbon is added for taste and odour control. This plant has a design capacity of 8.1 x 1000 m^3/day serves a population of approximately 3,600.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 2,283 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related CDWOs were exceeded.

The Alexandria Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
ALVINSTON WATER PLANT
1998 AND 1999 REPORT

The Alvinston Water Plant is a conventional treatment plant which treats water from the Sydenham river. The treatment process consists of coagulation, flocculation, clarification (upflow solids contact clarifier), filtration, post pH adjustment and disinfection. Powder activated carbon is added for taste and odour control. This plant has a design capacity of 0.755 x 1000 m^3/day and serves a population of approximately 700.

Raw and treated water at the plant and water at one location in the distribution system were sampled. A total of 4,307 tests were performed on up to 200 inorganic, organic and radiological parameters.

Total nitrate was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 10.0 mg/L in two treated water samples. Subsequent samples showed the nitrate level to be well below the objective.

No other health related ODWOs were exceeded.

The detection of certain pesticides at the Alvinston Water Plant indicates that the raw water source is influenced by agricultural activity. These results are similar to those reported in previous years.

The Alvinston Water Plant, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
AMHERSTBURG WATER PLANT
1998 AND 1999 REPORT

The Amherstburg Water Plant is a conventional treatment plant which treats water from the Detroit River. The process consists of coagulation, flocculation, clarification (upflow clarifier), filtration, and disinfection. Chlorine is added at the mouth of the intake structure for zebra mussel control. Powder activated carbon is added for taste and odour control. This plant has a rated capacity of 9.0 x 1000 m^3/day and serves a population of approximately 20,000.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 2,079 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Amherstburg Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
ATIKOKAN WATER PLANT
1998 AND 1999 REPORT

The Atikokan Water Plant is a conventional treatment plant which treats water from the Atikokan River. The process consists of coagulation, flocculation, sedimentation, filtration, pH adjustment, fluoridation and disinfection. This plant has a design capacity of 6.0 x 1000 m^3/day and serves a population of approximately 4,000.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 2,707 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Atikokan Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
AURORA WELL SUPPLY
1998 AND 1999 REPORT

The Aurora Well Supply is a groundwater source consisting of 6 wells. The water is treated with sodium silicate for iron sequestering and chlorine for disinfection. The maximum pumping capacity of the system is 27.67 x 1000 m3/day and serves a population of approximately 39,500.

Raw water from 6 wells, treated water from 2 water towers and one reservoir and at two locations in the distribution system were sampled. A total of 1,731 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Aurora well supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
BALMERTOWN (SANDY BAY) WATER PLANT
1998 AND 1999 REPORT

The Balmertown (Sandy Bay) Water Plant, owned and operated by Placer Dome Canada Ltd., supplies water to the Campbell mine, the townsite of Balmertown and the Goldcorp Mine. The Balmertown (Sandy Bay) Water Plant is a pumping station which partially treats water from Sandy Bay on Red Lake. The process consists of the addition of chlorine for disinfection. This plant has a rated capacity of 7.060 x 1000 m^3/day and serves a population of approximately 1,200.

Raw and treated water at the plant and water at one location in the distribution system were sampled. A total of 1,448 tests were performed on up to 200 inorganic, organic and radiological parameters.

Turbidity was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 1.0 NTU in one treated water sample. Turbidity interferes with disinfection and with the maintenance of an adequate level of chlorine in the distribution system. Municipalities are advised to review bacteriological monitoring results for the treated water and distribution system water to ensure that they meet the Ontario Drinking Water Objectives.

Total trihalomethanes were detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 100 ug/L (based on a running annual average of quarterly samples) in two sets of distribution system water samples during the entire sampling period.

No other health related ODWOs were exceeded.

The elevated levels of organic carbon, colour, turbidity and the resulting high trihalomethanes in the treated water are due to the lack of chemically assisted filtration at this facility.

The Balmertown (Sandy Bay) Water Plant, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
BARRIE WELL SUPPLY
1998 AND 1999 REPORT

The Barrie well supply is a groundwater source consisting of 14 wells. The water is treated with sodium silicate for iron sequestering and chlorine for disinfection. The maximum pumping capacity of the system is 111.40 x 1000 m^3/day and serves a population of approximately 100,000.

Raw water from 6 wells, treated water from two reservoirs and at two locations in the distribution system were sampled. A total of 1,727 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The numerous minerals and salts detected above aesthetic objectives is characteristic of many groundwater sources.

The detection of certain volatile organic compounds in specific wells and reservoirs is consistent with results reported in previous years.

The Barrie well supply, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
BEARDMORE WATER PLANT
1998 AND 1999 REPORT

The Beardmore Water Plant is a conventional treatment package plant which treats water from the Blackwater River. The process consists of coagulation, flocculation, sedimentation with the aid of tube settlers, filtration, alkalinity adjustment, corrosion control and disinfection. This plant has a design capacity of 1.36 x 1000 m^3/day and serves a population of approximately 350.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 2,264 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Beardmore Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
BEAVERTON WATER PLANT
1998 AND 1999 REPORT

The Beaverton Water Plant is a direct filtration plant which treats water from Lake Simcoe. The process consists of coagulation, flocculation, filtration, and disinfection. This plant has a rated capacity of 7.3 x 1000 m^3/day. The Beaverton Water Treatment Plant serves a population of approximately 3,300.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 2,110 tests were performed on up to 200 inorganic, organic and radiological parameters.

Lead was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 10.0 ug/L in one distribution system water sample. Subsequent samples showed the lead level to be well below the objective. Household taps should be sufficiently flushed, until the coolest water temperature is obtained, before water is used for consumption.

No other health related ODWOs were exceeded.

The Beaverton Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
BELLE RIVER WATER PLANT
1998 AND 1999 REPORT

The Belle River Water Plant is a conventional treatment plant which treats water from Lake St. Clair. The process consists of coagulation, flocculation, clarification (upflow clarifier), filtration using granular activated carbon (GAC) media, and disinfection. This plant has a design capacity of 18.0 x 1000 m^3/day and serves a population of approximately 14,100. This plant is now part of the town of Lakeshore.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 2,432 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Belle River Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
BELLEVILLE WATER PLANT
1998 AND 1999 REPORT

The Belleville Water Plant is a conventional treatment plant which treats water from the Bay of Quinte. The process consists of microstrainers, coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. Chlorine is added at the mouth of the intake structure for zebra mussel control. This plant has a design capacity of 75.000 x 1000 m^3/day and serves a population of approximately 36,800.
The Belleville Water Plant is currently undergoing an extensive upgrade which is scheduled to be completed by the end of 2000.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 1,998 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Belleville Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
BLEZARD VALLEY WELL SUPPLY
1998 AND 1999 REPORT

The Blezard Valley well supply is a groundwater source with nine wells serving a large area within the Regional Municipality of Sudbury. The water is treated with chlorine for disinfection and is fluoridated. The maximum pumping capacity of the system is 24.640 x 1000 m3/day and serves a population of approximately 32,500.

Raw water at 6 wells, treated water at one well and a booster station and at one location in the distribution system were sampled. A total of 1,599 tests were performed on up to 200 inorganic, organic and radiological parameters.

Fluoride was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 1.5 mg/L in one treated water sample. Subsequent samples showed the fluoride level to be below the objective. The treatment process for fluoride addition should be reviewed.

No other health related ODWOs were exceeded.

The Blezard Valley well supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
BOLTON WELL SUPPLY
1999 REPORT

The Bolton Well Supply is a groundwater source consisting of five wells. The water is treated with sodium silicate for iron sequestering and sodium hypochlorite for disinfection. The capacity of the system is 14.790 x 1000 m3/day and serves a population of approximately 18,000.

Raw water at five wells, treated water from the water tower and at one location in the distribution system were sampled. A total of 979 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Bolton well supply, for the sample year 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
BOURGET WELL SUPPLY
1998 AND 1999 REPORT

The Bourget well supply is a groundwater source consisting of two wells and three springs which flow into infiltration galleries. The water from the various sources is collected in a reservoir and disinfected with sodium hypochlorite. Ammonium sulphate is used in the disinfection process to convert the free chlorine into a combined (chloramine) residual to reduce the formation of disinfection by-products. The maximum pumping capacity of the system is 0.472 x 1000 m^3/day and serves a population of approximately 850.

Raw water from two wells and 3 infiltration systems, treated water from the booster station and at three locations in the distribution system were sampled. A total of 3,394 tests were performed on up to 200 inorganic, organic and radiological parameters .

Selenium was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 10.0 ug/L in one treated water sample and two distribution system water samples.

Chloramines were detected of the above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 3.0 mg/L in two treated water samples.

Turbidity was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 1.0 NTU in all treated water samples in seven sample events. Turbidity interferes with disinfection and with the maintenance of an adequate level of chlorine in the distribution system. Municipalities are advised to review bacteriological monitoring results for the treated water and distribution system water to ensure that they meet the Ontario Drinking Water Objectives.

Total trihalomethanes were detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 100 •g/L (based on a running annual average of quarterly samples) in five sets of distribution system water samples.

No other health related ODWOs were exceeded.

The number parameters detected above aesthetic objectives indicates the raw water source for the Bourget Well Supply is of poor quality.

The Bourget well supply, for the sample years 1998 and 1999 produced adequate quality water and this was maintained in the distribution.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
BOWMANVILLE WATER PLANT
1998 AND 1999 REPORT

The Bowmanville Water Plant is a direct filtration plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, filtration and disinfection. This plant has a design capacity of 36.4 x 1000 m^3/day and serves a population of approximately 21,500.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 617 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Bowmanville Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
BRACEBRIDGE WATER PLANT
1998 AND 1999 REPORT

The Bracebridge (Kirby Beach) Water Plant is a conventional treatment plant which treats water from Lake Muskoka. The process consists of pretreatment tanks for chemical addition, coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. Powder activated carbon can be added for taste and odour control and both pre- and post- alkalinity adjustment are used. Carbon dioxide gas is added to stabilize the pH. The Bracebridge (Kirby Beach) Water Plant has a rated capacity of 10.00 x 1000 m^3/day and serves a population of approximately 14,000.

Raw and treated water at the plant and at five locations in the distribution system were sampled. A total of 2,015 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Bracebridge (Kirby Beach) Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
BRADFORD WELL SUPPLY
1999 REPORT

The Bradford Well Supply is a groundwater source consisting of four wells and a well field of three wells. Raw water from the well field is pumped through an aeration tower to remove low levels of hydrogen, hydrogen sulphide and methane gas. Sodium silicate is added at one well for iron sequestering and sodium hypochlorite is added at all wells for disinfection. The maximum pumping capacity of the system is 12.829 x 1000 m3/day and serves a population of approximately 15,000.

Raw water from four wells and the well field, treated water from two wells and one reservoir and at one location in the distribution system were sampled. A total of 1,146 tests were performed on up to 200 inorganic, organic and radiological parameters.

Selenium was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 10.0 ug/L in one treated water sample.

No other health related ODWOs were exceeded.

The Bradford well supply, for the sample year 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
BRANTFORD WATER PLANT
1998 AND 1999 REPORT

The Brantford Water Plant is a conventional treatment plant which treats water from the Grand River via the Homedale Canal. The treatment process consists of coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. Ammonia is added to the disinfection process to convert the free chlorine into a combined (chloramine) residual. Sulphur dioxide is added occasionally to remove the excess chlorine from the disinfection process and powder activated carbon is added for taste and odour control when required. This plant has a design capacity of 100 x 1000 m^3/day and serves a population of approximately 85,000. The Brantford Water Plant is currently undergoing an extensive upgrade, including the Actiflo microsand process.

Raw and treated water at the plant and at four locations in the distribution system were sampled. A total of 3,993 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The detection certain pesticides at the Brantford Water Plant indicates that the raw water source is influenced by agricultural activity. These results are similar to those reported in previous years.

The Brantford Water Plant, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
BROCKVILLE WATER PLANT
1998 AND 1999 REPORT

The Brockville Water Plant is a direct filtration plant which treats water from the St. Lawrence River. The process consists of coagulation, flocculation, filtration with granular activated carbon (GAC) media, fluoridation and disinfection. This plant has a design capacity of 36.40 x 1000 m^3/day and serves a population of approximately 21,000.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 2,109 tests were performed on up to 200 inorganic, organic and radiological parameters.

Fluoride was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 1.5 mg/L in one treated water sample. Subsequent samples showed the fluoride level to be below the objective. The treatment process for fluoride addition should be reviewed.

No other health related ODWOs were exceeded.

The Brockville Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
BURLINGTON WATER PLANT
1998 AND 1999 REPORT

The Burlington Water Plant is a direct filtration plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, filtration, fluoridation and disinfection. Chlorine is added at the mouth of the intake structure for zebra control. This plant has a design capacity of 181.6 x 1000 m^3/day and serves a population of approximately 130,000.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,067 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Burlington Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
CAMBRIDGE WELL SUPPLY
1998 AND 1999 REPORT

The Cambridge well supply is groundwater source consisting of 26 wells servicing a large geographical area in the Region of Waterloo. The water is treated with sodium silicate for iron sequestering and sodium hypochlorite for disinfection. The maximum pumping capacity of the system is 63.600 x 1000 m^3/day and serves a population of approximately 104,000.

Raw water at one well, treated water at three pumping stations and at one reservoir were sampled. A total of 2,586 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The numerous minerals and salts detected above aesthetic objectives is characteristic of many groundwater sources.

The detection of certain volatile organic compounds in specific wells and reservoirs is consistent with results reported in previous years.

The Cambridge well supply, for the sample years 1998 and 1999 produced good quality water. No samples were taken in the distribution system for this sampling period.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
CAPREOL WELL SUPPLY
1998 AND 1999 REPORT

The Capreol well supply is a groundwater source consisting of three wells. The water is treated with chlorine for disinfection. The maximum pumping capacity of the system is 10.14 x 1000 m3/day and serves a population of approximately 3,600.

Raw water from three wells, treated water from two wells and at two locations in the distribution system were sampled. A total of 1,609 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Capreol well supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
CASSELMAN WATER PLANT
1998 AND 1999 REPORT

The Casselman Water Plant is a conventional treatment plant which treats water from the South Nation River. The treatment process consists of coagulation, flocculation, clarification (upflow clarifier), filtration, pH adjustment and disinfection. Powder activated carbon is added for taste and odour control. This plant has a rated capacity of 3.182 x 1000 m^3/day and serves a population of approximately 2,960.

Raw and treated water at the plant and at three locations in the distribution system were sampled. A total of 4,862 tests were performed on up to 200 inorganic, organic and radiological parameters.

NDMA (N-nitrosodimethylamine) was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 0.009 ug/l in two treated water samples. Subsequent samples showed the NDMA level to be below the objective.

No other health related ODWOs were exceeded.

The detection of certain pesticides at the Casselman Water Plant indicates that this raw water source is influenced by agricultural activity. The results were similar to those reported in previous years.

The Casselman Water Plant, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
CHALK RIVER WATER PLANT
1999 REPORT

The Chalk River Water Plant is a conventional treatment package plant which treats water from Corry Lake. The process consists of alkalinity adjustment, coagulation, flocculation, sedimentation, filtration, pH adjustment, fluoridation and disinfection. This plant has a design capacity of 1.980 x 1000 m^3/day and serves a population of approximately 900.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 917 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Chalk River Water Plant, for the sample year 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
CHAPLEAU WATER PLANT
1998 AND 1999 REPORT

The Chapleau Water Plant is a conventional treatment plant which treats water from the Chapleau River. The process consists of coagulation, flocculation, clarification (upflow clarifier), filtration, pH adjustment and disinfection. Ammonia is used in the disinfection process to convert free chlorine to a combined (chloramine) residual. This plant has a design capacity of 5.4 x 1000 m^3/day and serves a population of approximately 2,800.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,995 tests were performed on up to 200 inorganic, organic and radiological parameters.

Lead was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 10 ug/L in one distribution system water sample. Subsequent samples showed the lead level to be well below the objective. Household taps should be sufficiently flushed, until the coolest water temperature is obtained, before water is used for consumption.

Turbidity was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 1.0 NTU in one treated water sample. Turbidity interferes with disinfection and with the maintenance of an adequate level of chlorine in the distribution system. Municipalities are advised to review bacteriological monitoring results for the treated water and distribution system water to ensure that they meet the Ontario Drinking Water Objectives.

No other health related ODWOs were exceeded.

The Chapleau Water Plant, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
SOUTH GLENGARRY-GLEN WALTER WATER PLANT
1998 AND 1999 REPORT

The South Glengarry-Glen Walter Water Plant (formerly the Charlottenburgh Water Plant) is a conventional treatment plant which treats water from the St. Lawrence River. The process consists of coagulation, flocculation, sedimentation, dual media filtration followed by filtration through granular activated carbon (GAC) contactors and disinfection. This plant has a rated capacity of 0.995 x 1000 m^3/day and serves a population of approximately 600.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 2,125 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The South Glengarry-Glen Walter Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
CHARLTON WATER PLANT
1999 REPORT

The Charlton Water Plant is a conventional treatment package plant which treats water from the Englehart River. The process consists of coagulation, flocculation, sedimentation, filtration, pH adjustment and disinfection. This plant has a design capacity of 0.561 x 1000 m^3/day and serves a population of approximately 250.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,317 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Charlton Water Plant, for the sample year 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
CHATHAM WATER PLANT
1998 AND 1999 REPORT

The Chatham Water Plant is a conventional treatment plant which treats water from Lake Erie. Raw water is chlorinated at the lowlift pumping station, located at Lake Erie, and is then pumped nine kilometres to the water plant in Chatham. The plant process consists of coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. This plant has a design capacity of 90.0 x 1000 m^3/day and serves a population of approximately 53,000.

Chlorinated raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,548 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Chatham Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
CLARENCE CREEK WELL SUPPLY
1998 AND 1999 REPORT

The Clarence Creek well supply is a groundwater source consisting of two wells. The water is treated with sodium hypochlorite is added for disinfection and ammonium sulphate is used in the disinfection process to convert the free chlorine into a combined (chloramine) residual to reduce the formation of disinfection by-products. The maximum pumping capacity of the system is 0.682 x 1000 m3/day and serves a population of approximately 625.

Raw and treated water from three wells and at two locations in the distribution system were sampled. A total of 3,917 tests were performed on up to 200 inorganic, organic and radiological parameters.

Turbidity was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 1.0 NTU in most treated water samples in seven sample events. Turbidity interferes with disinfection and with the maintenance of an adequate level of chlorine in the distribution system. Municipalities are advised to review bacteriological monitoring results for the treated water and distribution system water to ensure that they meet the Ontario Drinking Water Objectives.

No other health related ODWOs were exceeded.

The Clarence Creek well supply, for the sample years of 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
COBOURG WATER PLANT
1998 AND 1999 REPORT

The Cobourg Water Plant is a conventional treatment plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, clarification (upflow clarifier with tube settlers), filtration using granular activated carbon (GAC) media, and disinfection. Chlorine is added at the intake for zebra mussel control. This plant has a design capacity of 36.36 x 1000 m^3/day and serves a population of approximately 16,800.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,107 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Cobourg Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
COCHENOUR WATER PLANT
1998 AND 1999 REPORT

The Cochenour Water Plant is a pumping station which partially treats water from the Bruce Channel in Red Lake. The process consists of the addition of chlorine for disinfection. The plant has a design capacity of 4.518 x 1000 m^3/day and serves a population of approximately 750.

Raw and treated water at the plant and water at two locations in the distribution system were sampled. A total of 2,041 tests were performed on up to 200 inorganic, organic and radiological parameters.

Total trihalomethanes were detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 100 ug/L (based on a running annual average of quarterly samples) in seven sets of distribution system water samples during the entire sampling period.

Turbidity was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) 1.0 NTU in three treated water samples. Turbidity interferes with disinfection and with the maintenance of an adequate level of chlorine in the distribution system. Municipalities are advised to review bacteriological monitoring results for the treated water and distribution system water to ensure that they meet the Ontario Drinking Water Objectives.

No other health related ODWOs were exceeded.

The elevated levels of organic carbon, colour, turbidity and the resulting high trihalomethanes in the treated water are due to the lack of chemically assisted filtration at this facility.

The Cochenour Water Plant, for the sample years 1998 and 1999, produced adequate quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
COLLINGWOOD WATER PLANT
1998 AND 1999 REPORT

The Collingwood Water Plant is a microfiltration plant which treats water from Georgian Bay. The process consists of microfiltration using a microfilter membrane and disinfection. Chlorine is added at the intake for zebra mussel control. The design capacity of the plant is 27.35 x 1000 m^3/day and serves a population of approximately 16,000.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 2,747 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Collingwood Water Plant, for the years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
CORNWALL WATER PLANT
1998 AND 1999 REPORT

The Cornwall Water Plant is a conventional treatment plant which treats water from the St. Lawrence River. The process consists of coagulation, flocculation, sedimentation, filtration using granular activated carbon (GAC) media, disinfection and fluoridation. Chlorine is added at the mouth of the intake structure for zebra mussel control. This plant has a design capacity of 100 x 1000 m^3/day and serves a population of approximately 48,500.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 2,182 tests were performed on up to 200 inorganic, organic and radiological parameters.

Fluoride was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 1.5 mg/L in one treated water sample. Subsequent samples showed the fluoride level to be below the objective. The treatment process for fluoride addition should be reviewed.

No other health related ODWOs were exceeded.

The Cornwall Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
DEEP RIVER WATER PLANT
1999 REPORT

The Deep River Water Plant is a conventional treatment plant which treats water from the Ottawa River. The process consists of pre-alkalinity adjustment, coagulation, flocculation, sedimentation, filtration, post pH adjustment, fluoridation and disinfection using chlorine dioxide which is generated on-site. This plant has a rated capacity of 9.090 x 1000 m^3/day and serves a population of 4,200.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,002 tests were performed on up to 200 inorganic, organic and radiological parameters.

Lead was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 10 ug/L in one treated water sample. This sample was suspect due to the possibility of improper preservation. A subsequent sample showed the lead level to be well below the objective.

No other health related ODWOs were exceeded.

The Deep River Water Plant, for the sample year 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
DELHI WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The Delhi Water Supply System has two raw water sources: Surface water from the North Creek/Lehman Dam and groundwater from one well.

The Delhi water plant is a conventional treatment plant which treats water from the North Creek/Lehman Dam. The process consists of coagulation, flocculation, sedimentation, filtration with pressure filters, fluoridation and disinfection. This plant has a rated capacity of 4.54 x 1000 m^3/day.

The Delhi well supply consists of one well. The water is fluoridated and sodium hypochlorite is added for disinfection. The well supplies about 25% of the total demand of the system and has a maximum pumping capacity of 0.84 x 1000 m^3/day.

Treated water from the water plant and the well mix in the distribution system. The Delhi Water Supply System serves a population of approximately 4,100.

Raw and treated water at the plant, raw and treated water at the well and at one location in the distribution system were sampled. A total of 6,091 tests were performed on 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Delhi Water Plant together with the well supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
DELORO WELL SUPPLY
1999 REPORT

The Deloro Well Supply is a groundwater source consisting of one well. Raw water is pumped into a reservoir where sodium hypochlorite is added for disinfection. The maximum pumping capacity of the system is 0.327 x 1000 m3/day and serves a population of approximately 140.

Raw water from the well and treated water from the reservoir and at one location in the distribution system were sampled. A total of 1,107 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Deloro well supply, for the sample year 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
DESERONTO WATER PLANT
1998 AND 1999 REPORT

The Deseronto Water Plant is a conventional treatment plant which treats water from the Bay of Quinte. The process consists of coagulation, flocculation, clarification (upflow clarifier), filtration, pH control and disinfection. Granular activated carbon (GAC) contactors are used for taste and odour control. Chlorine is added at the intake for zebra mussel control. This plant has a rated capacity of 2.9 x 1000 m^3/day and serves a population of approximately 2,100.

Raw and treated water at the plant and at three locations in the distribution system were sampled. A total of 2,070 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Deseronto Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
DORCHESTER WELL SUPPLY
1998 AND 1999 REPORT

The Dorchester well supply is a groundwater source consisting of 7 wells. The water is treated with sodium silicate for iron sequestering and chlorine for disinfection. The maximum pumping capacity of the system is 4.329 x 1000 m3/day and serves a population of approximately 4,660.

Raw water from 7 wells, treated water from 1 reservoir and at four locations in the distribution system were sampled. A total of 2,347 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The numerous minerals and salts detected above aesthetic objectives is characteristic of many groundwater sources.

The Dorchester well supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
DOWLING WELL SUPPLY
1998 AND 1999 REPORT

The Dowling well supply is a groundwater source consisting of 2 wells. The water is fluoridated and chlorine is added for disinfection. The maximum pumping capacity of the system is 7.200 x 1,000 m^3/day and serves a population of approximately 1,970.

Raw and treated water from 2 wells and at one location in the distribution system were sampled. A total of 1,709 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Dowling well supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
DRYDEN WATER PLANT
1998 AND 1999 REPORT

The Dryden Water Plant is a conventional treatment plant which treats water from Lake Wabigoon. The process consists of coagulation, flocculation, clarification (upflow clarifier), filtration, pH adjustment, fluoridation and disinfection. This plant has a design capacity of 13.75 x 1000 m^3/day and serves a population of approximately 6,300.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 2,335 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Dryden Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
DUNNVILLE WATER PLANT
1998 AND 1999 REPORT

The Dunnville Water Plant is a conventional treatment plant which treats water from Lake Erie. Raw water is chlorinated at the low lift pumping station, located at Lake Erie, and is then pumped seven kilometres to the water plant in Dunnville. The treatment process consists of coagulation, flocculation, sedimentation, filtration using granular activated carbon (GAC) media, and disinfection. Sodium Hypochlorite is added at the intake for zebra mussel control. This plant has a design capacity of 14.5 x 1000 m^3/day and serves a population of approximately 11,300.

Chlorinated raw water at the plant, treated water and one location in the distribution were sampled. A total of 1,490 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Dunnville Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
EAR FALLS WATER PLANT
1998 AND 1999 REPORT

The Ear Falls Plant is a conventional treatment plant which treats water from the English River. The process consists of coagulation, flocculation, clarification (upflow clarifiers), filtration, pH adjustment and disinfection. This plant has a design capacity of 4.54 x 1000 m^3/day and serves a population of approximately 1,100.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 2,962 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Ear Falls Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
ELLIOT LAKE WATER PLANT
1999 REPORT

The Elliot Lake Water Plant is a direct filtration plant which treats water from Elliot Lake. The process consists of coagulation, flocculation, filtration, fluoridation, pH adjustment and disinfection. This plant has a rated capacity of 16.000 x 1000 m^3/day and serves a population of approximately 14,500.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,316 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Elliot Lake Water Plant, for the sample year 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
EMO WATER PLANT
1998 AND 1999 REPORT

The Emo Water Plant is a conventional treatment package plant which treats water from Rainy River. The process consists of coagulation, flocculation, sedimentation, filtration, pH adjustment and disinfection. This plant has a design capacity of 0.83 x 1000 m^3/day and serves a population of approximately 900.

Raw and treated water at the plant and water at one location in the distribution system were sampled. A total of 2,506 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The persistent finding of aluminum levels above the Ontario Drinking Water Objective of 100 •g/L in the treated and distributed water suggests that the treatment process should be optimized.

The Emo Water Plant, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
ERIN WELL SUPPLY
1998 AND 1999 REPORT

The Erin Well Supply is a ground water source consisting of eight wells. The water is disinfected with sodium hypochlorite. The maximum pumping capacity is 6.700 x 1,000 m^3/day and serves a population of 3,000

Raw and treated water from the 3 wells in Erin and at two locations in the distribution system along with raw and treated water from 1 well in Hillsburgh Heights, 1 well in Glendevon and raw water from 1 well in Mountainview were sampled. A total of,335 tests were performed on up to 200 inorganic, and organic parameters.

No health related ODWOs were exceeded.

The numerous minerals and salts detected above aesthetic objectives is characteristic of many ground water supplies.

The Erin Well Supply, for the sample years of 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
EXETER WELL SUPPLY
1999 REPORT

The Exeter Well Supply is a groundwater source consisting of four wells and a spring infiltration system. Chlorine is added to the raw water from the four wells for disinfection. The water collected at the infiltration system is disinfected with chlorine and mixed with water from the distribution in the reservoir. The capacity of the system is 7.000 x 1000 m3/day and serves a population of approximately 4,400.

Exeter is also connected to the Lake Huron Water Supply which can be used as a reserve supply and provides higher peak capacity and additional system pressure when needed.

Raw water from four wells and the spring infiltration system and treated water from one location in the distribution system was sampled. A total of 1,038 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Exeter well supply, for the sample year 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
FERGUS WELL SUPPLY
1998 AND 1999 REPORT

The Fergus Well Supply is a groundwater source consisting of five wells. Raw water from one well is pumped through an aeration tower to provide air stripping to remove low levels of volatile organic compounds. Sodium silicate is added at one well for iron sequestering and chlorine is added at five wells for disinfection. The maximum pumping capacity of the system is 7.500 x 1000 m3/day and serves a population of 7,000.

Raw water at five wells, treated water from one well and one reservoir and at one location in the distribution system were sampled. A total of 1,527 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The numerous minerals and salts detected above aesthetic objectives is characteristic of many groundwater sources.

The Fergus well supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
FORT ERIE (ROSEHILL) WATER PLANT
1998 AND 1999 REPORT

The Fort Erie (Rosehill) Water Plant is a conventional treatment plant which treats water from Lake Erie. The process consists of coagulation, flocculation, sedimentation, filtration using granular activated carbon (GAC) media, pH control and disinfection. Sodium hypochlorite is added at the mouth of the intake structure for zebra mussel control. This plant has a design capacity of 78.000 x 1000 m^3/day and serves a population of approximately 26,700.

Raw and treated water at the plant and water at two locations in the distribution system were sampled . A total of 1,497 tests were performed on 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Fort Erie (Rosehill) Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
FORT FRANCES WATER PLANT
1998 AND 1999 REPORT

The Fort Frances Water Plant is a conventional treatment plant which treats water from the Rainy River. The process consists of coagulation, flocculation, clarification (upflow clarifier), filtration, pH adjustment, fluoridation and disinfection. This plant has a design capacity of 17.450 x 1000 m^3/day and serves a population of approximately 10,000.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 2,136 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Fort Frances Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
GARSON WELL SUPPLY
1998 AND 1999 REPORT

The Garson well supply is a groundwater source consisting of three wells. The water is fluoridated and chlorine is added for disinfection. The maximum pumping capacity of the system is 7.790 x 1000 m3/day and serves a population of approximately 4,800.

Raw water at three wells and treated water from one location in the distribution system were sampled. A total of 1,049 tests were performed the presence of up to 200 inorganic, and organic parameters.

No health related ODWOs were exceeded.

The Garson well supply, for the sample years 1998 1999, produced good quality water and this was maintained in the distribution

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
GEORGETOWN WELL SUPPLY
1999 REPORT

The Georgetown Well Supply is a groundwater source consisting of seven wells. The water is fluoridated and treated with chlorine for disinfection. At one well potassium permanganate is added and the water is pumped through two manganese green sand pressure filters for iron/manganese removal. The maximum pumping capacity of the system is 20.000 x 1000 m3/day and serves a population of 20,000.

Raw water at 6 wells, treated water at four wells, one reservoir and at one location in the distribution system were sampled. A total of 1,579 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Georgetown well supply, for the sample year 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
GODERICH WATER PLANT
1998 AND 1999 REPORT

The Goderich Water Plant is a conventional treatment plant which treats water from Lake Huron. The process consists of coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. Powder activated carbon is added for taste and odour control as required. This plant has a design capacity of 12.0 x 1000 m^3/day and serves a population of approximately 8,000.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,536 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Goderich Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
GORE BAY WATER PLANT
1999 REPORT

The Gore Bay Water Plant is a pumping station which partially treats water from Lake Huron/North Channel. The process consists of the addition of chlorine for disinfection. The chlorine injection point is located 25 m into the intake to provide additional contact time for the disinfection process. This plant has a design capacity of 2.357 x 1000 m^3/day and serves a population of approximately 800.

Treated water at the plant and at one location in the distribution system were sampled. A total of 985 tests were performed on up to 200 inorganic, organic and radiological parameters. No raw water samples were taken.

No health related ODWOs were exceeded.

The Gore Bay Water Plant, for the sample year 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
GRAVENHURST WATER PLANT
1998 AND 1999 REPORT

The Gravenhurst Water Plant is a direct filtration plant which treats water from Lake Muskoka. The process consists of coagulation, flocculation, filtration, both pre and post pH adjustment and disinfection. This plant has a rated capacity of 15.0 x 1000 m^3/day and serves a population of approximately 8,000.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 2,129 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Gravenhurst Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
GRIMSBY WATER PLANT
1998 AND 1999 REPORT

The Grimsby Water Plant is a conventional treatment plant that treats water from Lake Ontario. The treatment process consists of pretreatment tanks for chemical addition, coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. Powder activated carbon is added for taste and odour control as required. Chlorine is added at the mouth of the intake structure for zebra mussel control. This plant has a design capacity of 44.0 x 1000 m^3/day and serves a population of approximately 37,500.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,464 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Grimsby Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
GUELPH WELL SUPPLY
1998 AND 1999 REPORT

The Guelph well supply is a groundwater source consisting of 20 wells. The water is treated with sodium silicate for iron sequestering. Chlorine is added for disinfection and polyphosphate is used for corrosion control. This supply has a maximum pumping capacity of 90.4 x 1000 m^3/day and serves a population of approximately 90,000.

Raw water from two wells, treated water from two reservoirs and at one location in the distribution system were sampled. A total of 2,095 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The numerous minerals and salts detected above aesthetic objectives is characteristic of many groundwater sources.

The Guelph well supply for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
HALDIMAND/NORFOLK WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The Haldimand/Norfolk Water Supply System is a conventional treatment plant which treats water from Lake Erie. The process consists of coagulation, flocculation, clarification (upflow clarifier), filtration, and disinfection. Chlorine is added at the mouth of the intake structure for zebra mussel control. This plant has a rated capacity of 4.2 x 1000 m^3/day and serves a population of approximately 4,000.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,850 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Haldimand/Norfolk water supply system, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
HAMILTON WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The Hamilton Water Supply System is a conventional treatment plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. Ammonia is used in the disinfection process to convert free chlorine to a combined chloramine residual. Sulphur dioxide is added to remove the excess chlorine from the disinfection process. Chlorine is added at the mouth of the intake structure for zebra mussel control. This plant has a design capacity of 909 x 1000 m^3/day and serves a population of approximately 411,500.

Raw and treated water at the plant and water at two locations in the distribution system were sampled. A total of 1,529 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Hamilton Water Supply System, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
HARROW-COLCHESTER WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The Harrow-Colchester Water Supply System is a conventional treatment plant which treats water from Lake Erie. The process consists of coagulation, flocculation, clarification (upflow clarifier), filtration and disinfection. Powder activated carbon is added for taste and odour control. Chlorine is added at the mouth of the intake structure for zebra mussel control. This plant has a rated capacity of 10.2 x 1000 m^3/day and serves a population of approximately 8,602.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,057 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Harrow-Colchester water supply system, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
HAWKESBURY WATER PLANT
1998 AND 1999 REPORT

The Hawkesbury Water Plant is a conventional treatment plant which treats water from the Ottawa River. The process consists of coagulation, flocculation, clarification (upflow clarifier), filtration, pH adjustment, fluoridation and disinfection. This plant has a rated capacity of 12.3 x 1000 m^3/day and serves a population of approximately 9,700.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 2,678 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Hawkesbury Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
HEARST WATER PLANT
1999 REPORT

The Hearst Water Plant is a conventional treatment plant which treats water from the Mattawishkwia River. The process consists of pre pH adjustment, coagulation, flocculation, sedimentation, filtration, post pH adjustment and disinfection. Ammonium sulphate is used in the disinfection process to convert the free chlorine to a combined chlorine (chloramine) residual. This plant has a rated capacity of 3.101 x 1000 m^3/day and serves a population of approximately 6,000.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 1,332 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Hearst Water Plant, for the sample year 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
HUDSON WATER PLANT
1998 AND 1999 REPORT

The Hudson Water Plant is a pumping station which partially treats water from Lost Lake. The process consists of the addition of chlorine for disinfection. This plant has a design capacity of 1.760 x 1000 m^3/day and serves a population of approximately 500.

Raw and treated water at the plant and at two locations in the distribution system were sampled . A total of 2,073 tests were performed on up to 200 inorganic, organic and radiological parameters.

Turbidity was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 1.0 NTU in seven treated water samples. Turbidity interferes with disinfection and with the maintenance of an adequate level of chlorine in the distribution system. Municipalities are advised to review bacteriological monitoring results for the treated water and the distribution system water to ensure that they meet the Ontario Drinking Water Objectives.

Total trihalomethanes were detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 100 ug/L (as a running annual average of quarterly samples) in one set of calculated results in the distribution.

No other health related ODWOs were exceeded.

The Hudson Water Plant, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
HUNTSVILLE WATER PLANT
1998 AND 1999 REPORT

The Huntsville Water Plant is a conventional treatment plant which treats water from Fairy Lake. The treatment process consists of alkalinity and pH adjustment, coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. This plant has a design capacity of 9.0 x 1000 m^3/day and serves a population of approximately 18,000.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 2,143 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Huntsville Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
INGERSOLL WELL SUPPLY
1998 AND 1999 REPORT

The Ingersoll Well Supply is a groundwater source which consists of seven wells. At each well, water is pumped through an aeration tower to remove low levels of hydrogen sulphide. The maximum pumping capacity of the system is 25.000 x 1000 m^3/day and serves a population of approximately 10,000.

Raw and treated water from seven wells and at one location in the distribution were sampled. A total of 3,393 tests were performed on up to 200 inorganic, organic and radiological parameters.

Fluoride was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 1.5 mg/L in all treated water samples in four sample events. The fluoride is naturally occurring.

Turbidity was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 1.0 NTU in most treated water samples in three sample events. Turbidity interferes with disinfection and with the maintenance of an adequate level of chlorine in the distribution system. Municipalities are advised to review bacteriological monitoring results for the treated water and distribution system water to ensure that they meet the Ontario Drinking Water Objectives.

No other health related ODWOs were exceeded.

The numerous minerals and salts detected above aesthetic objectives is characteristic of many groundwater sources.

The aeration process, used for the removal of hydrogen sulphide gas from the raw water, significantly reduces the levels of certain volatile organic compounds in specific wells.

The Ingersoll Well Supply, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
INGLESIDE WATER PLANT
1997 AND 1998 REPORT

The Ingleside Water Plant is a pumping station which partially treats water from the St. Lawrence River. Chlorine is used for zebra mussel control at the mouth of the intake and additional chlorine added for disinfection. This plant has a design capacity of 7.757 x 1000 m^3/day and serves a population of approximately 2,000.

Raw and treated water at the plant and at one location in the distribution system were sampled. One sample in 1997 which was not reported previously is included in this report. A total of 610 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Ingleside Water Plant, for the sample years 1997 and 1998, produced acceptable quality water and this was maintained in the distribution system. This plant was not sampled in 1999.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
KENORA WATER PLANT
1998 AND 1999 REPORT

The Kenora Water Plant is a conventional treatment plant which treats water from Lake of the Woods. The process consists of coagulation, flocculation, clarification (upflow clarifier), filtration, fluoridation, pH adjustment and disinfection. This plant has a rated capacity of 22.0 x 1000 m^3/day and serves a population of approximately 16,000.

One raw and two treated water at the plant and at two locations in the distribution system were sampled. A total of 2,202 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Kenora Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
KESWICK WATER PLANT
1999 REPORT

The Keswick Water Plant is a conventional treatment plant which treats water from Lake Simcoe. The process consists of coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. Chlorine can be added at the mouth of the intake structure for zebra mussel control. This plant has a rated capacity of 15.000 x 1000 m^3/day and serves a population of 15,000.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,460 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Keswick Water Plant, for the sample year 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
KINGSTON WATER PLANT
1998 AND 1999 REPORT

The Kingston Water Treatment Plant is a conventional treatment plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, sedimentation, filtration with granular activated carbon (GAC) media , and disinfection. Sulphur dioxide is added to remove the excess chlorine from the disinfection process. Chlorine is added at the mouth of the intake structure for zebra mussel control. This plant has a design capacity of 128 x 1000 m^3/day and serves a population of approximately 87,500.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,495 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Kingston Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
KIRKLAND LAKE WATER PLANT
1999 REPORT

The Kirkland Lake Water Plant is a conventional treatment plant which treats water from Gull Lake. The process consists of coagulation, flocculation, sedimentation, filtration, pH adjustment fluoridation and disinfection. This plant has a rated capacity of 22.500 x 1000 m^3/day and serves a population of approximately 10,500
.
Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,475 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Kirkland Lake Water Plant, for the sample years 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
KITCHENER (MANNHEIM) WATER PLANT
1998 AND 1999 REPORT

The Kitchener (Mannheim) Water Plant is a conventional treatment plant which treats water from the Grand River. Raw water is pumped 10 kilometres from the Grand River to the Mannheim treatment facility. The process consists of pre-ozonation, coagulation, flocculation, sedimentation, filtration (choice of dual media filters or granular activated carbon (GAC) filters and disinfection. This plant has a design capacity of 72 x 1000 m^3/day and together with the many wells in the Kitchener groundwater supply, serve a population of approximately 182,100.

Plant raw and treated water and at one location in the distribution system were sampled. A total of 4,102 tests were performed on up to 200 inorganic, organic and radiological parameters. The Kitchener distribution location is likely to be a mixture of treated water from the plant and groundwater from the many wells that supply the system.

No health related ODWOs were exceeded.

The Kitchener (Mannheim) Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
KITCHENER WELL SUPPLY
1998 AND 1999 REPORT

The Kitchener well supply is a ground water source containing 38 wells serving a large geographical area of the Regional Municipality of Waterloo. The treatment process includes the addition of potassium permanganate for iron/manganese removal, filtration through green sand filters and disinfection using sodium hypochlorite. The Kitchener well supply has a maximum pumping capacity of 112.0 x 1000 m^3/day and together with the Kitchener Mannheim water plant serves a population of approximately 182,100.

Raw water at three wells and treated water at two reservoirs were sampled. A total of 1,512 tests were performed on up to 200 inorganic, organic and radiological parameters. The distribution sample location results are reported with the Kitchener Mannheim results.

No health related ODWOs were exceeded.

The numerous minerals and salts detected above aesthetic objectives is characteristic of many ground water sources.

The detection of certain volatile organic compounds in specific wells and reservoirs is consistent with results reported in previous years.

The Kitchener well supply, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
LANCASTER WELL SUPPLY
1997, 1998 AND 1999 REPORT

The Lancaster Well Supply is a groundwater source consisting of two wells. Water is treated with sodium hypochlorite for disinfection. The capacity of the system is 1.309 x 1000 m3/day and serves a population of approximately 1,000.

Raw water from two wells and treated water from one location in the distribution system were sampled. One sample in 1997 which was not reported previously is included in this report. A total of 859 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The numerous minerals and salts detected above aesthetic objectives is characteristic of many groundwater sources.

The Lancaster well supply, for the sample years 1997, 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
LINDSAY WATER PLANT
1998 AND 1999 REPORT

The Lindsay Water Plant is a conventional treatment plant which treats water from the Scugog River. The process was upgraded in the spring of 1998 to include the Actiflo micro sand process. The process consists of coagulation, flocculation, sedimentation, filtration, pH adjustment and disinfection. This plant has a design capacity of 22.7 x 1000 m^3/day and serves a population of approximately 17,500.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,913 tests were performed on up to 200 inorganic, organic and radiological parameters.

Lead was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 10 ug/l in one distribution system water sample. Subsequent samples showed the lead level to be well below the objective. Household taps should be sufficiently flushed until the coolest water temperature is obtained, before water is used for consumption.

NDMA(N-nitrosodimethylamine) was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 0.009 ug/l in one treated sample. Subsequent samples showed the NDMA level to be below the objective.

The detection of specific volatile organic compounds in the summer months is consistent with previous years and may be attributed to recreational activity in the river.

The Lindsay Water Plant, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
LONDON (LAKE HURON) WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The London (Lake Huron) Water Plant, located at Grand Bend, is a conventional treatment plant which treats water from Lake Huron. The process consists of coagulation, flocculation, sedimentation, filtration and disinfection. Chlorine is added at the mouth of the intake structure for zebra mussel control. Treated water from this plant is pumped to the city of London where it is fluoridated at the Arva reservoir prior to distribution. This plant has a design capacity of 327 x 1000 m^3/day and serves a population of approximately 343,000.

Raw and treated water at the plant, treated water at the Arva reservoir and at one location in the distribution were sampled. A total of 1,892 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The London (Lake Huron) water supply system, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
LONG SAULT WATER PLANT
1998 AND 1999 REPORT

The Long Sault Water Plant is a pumping station which partially treats water from the St. Lawrence River. The water is treated with chlorine for disinfection. This plant has a design capacity of 4.85 x 1000 m^3/day and serves a population of approximately 2,000.

Treated water at the plant and at one location in the distribution system were sampled. A total of 248 tests were performed for the presence of up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Long Sault Water Plant, for the sample year 1998 produced acceptable quality water and this was maintained in the distribution system. The Long Sault Water Plant was not sampled in 1999.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
MADSEN WATER PLANT
1998 AND 1999 REPORT

The Madsen Water Plant is a pumping station which partially treats water from Russet Lake. The process consists of the addition of sodium hypochlorite for disinfection. The plant has a design capacity of 0.84 x 1000 m^3/day and serves a population of approximately 300.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 2,223 tests were performed on up to 200 inorganic, organic and radiological parameters.

Turbidity was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 1.0 NTU in one treated water sample. Turbidity interferes with disinfection and with the maintenance of an adequate level of chlorine in the distribution system. Municipalities are advised to review bacteriological monitoring results for the treated water and distribution system water to ensure that they meet the Ontario Drinking Water Objectives.

Total trihalomethanes were detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 100 ug/L (based on a running annual average of quarterly samples) in eight sets of distribution system water samples during the entire sampling period.

No other health related ODWOs were exceeded.

High organic carbon, colour, turbidity, and the resulting elevated trihalomethane in the treated water can be attributed to the lack of chemically assisted filtration at this facility.

The Madsen Water Treatment Plant, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
MANITOUWADGE WELL SUPPLY
1998 AND 1999 REPORT

The Manitouwadge well supply is a ground water source consisting of five wells. The raw water from all wells is pumped through two parallel aeration towers to remove low levels of hydrogen sulphide gas. The water is disinfected with chlorine. This supply has a maximum pumping capacity of 13.2 x 1000 m^3/day and serves a population of approximately 4,500.

Raw water from the five wells and treated water from the reservoir and at one location in the distribution system were sampled. A total of 2,253 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The numerous minerals and salts detected above aesthetic objectives is characteristic of many ground water sources.

The Manitouwadge well supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
MARATHON WELL SUPPLY
1998 AND 1999 REPORT

The Marathon well supply is a ground water source consisting of seven wells. No treatment is provided but chlorine is available for disinfection in emergency situations. This plant has a maximum pumping capacity of 8.2 x 1000 m^3/day and serves a population of approximately 4,800.

Water from four wells, the reservoir and at one location in the distribution system were sampled. A total of 1,040 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The numerous minerals and salts detected above aesthetic objectives is characteristic of many groundwater sources.

The Marathon well supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
MIDLAND WELL SUPPLY
1998 AND 1999 REPORT

The Midland Well Supply is a groundwater source which consists of 17 wells. The water is treated with sodium hypochlorite for disinfection. The maximum pumping capacity is 22.7 x 1000 m^3/day and serves a population of approximately 16,400.

Raw water from seven wells, treated water from two wells and the flume reservoir, and two locations in the distribution system were sampled. A total of 2,377 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The presence of minerals and salts above aesthetic objectives is characteristic of many groundwater sources.

The Midland Well Supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
MILTON WELL SUPPLY
1998 AND 1999 REPORT

The Milton well supply is a ground water source which consists of six wells in the Kelso and Walker's Line aquifiers. The water is treated with chlorine for disinfection. The maximum pumping capacity of 28.2 x 1000 m^3/day. The Milton well supply serves a population of approximately 24,000.

Raw and treated water from both aquifers and two locations in the distribution system were sampled. A total of 722 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The numerous minerals and salts detected above aesthetic objectives is characteristic of many groundwater sources.

The Milton well supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
MORRISBURG WATER PLANT
1997, 1998 AND 1999 REPORT

The Morrisburg Water Plant is a pumping station which partially treats water from the St. Lawrence River. Chlorine is used for zebra mussel control at the mouth of the intake and additional chlorine added for disinfection. This plant has a rated capacity of 5.228 x 1000 m^3/day and serves a population of approximately 2,362.

Raw and treated water at the plant and at two locations in the distribution system were sampled. One sample in 1997 which was not reported previously is included in this report. A total of 2,806 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Morrisburg Water Plant, for the sample years 1997,1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
NAPANEE WATER PLANT
1998 AND 1999 REPORT

The Napanee Water Plant is a conventional treatment plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, sedimentation, filtration and disinfection. Sodium hypochlorite is added at the mouth of the intake structure for zebra mussel control. This plant has a design capacity of 12.7 x 1000 m^3/day and serves a population of approximately 13,782.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 1,148 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Napanee Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
NEWMARKET WELL SUPPLY
1998 AND 1999 REPORT

Newmarket well supply is a groundwater source which consists of 10 wells. The water is treated with sodium silicate for iron sequestering and with chlorine for disinfection. The capacity of the Newmarket system is 55.521 x 1000m3/day and serves a population of 77,506.

Raw water from nine wells, and treated water from three storage towers and one location in the distribution system were sampled. A total of 1,720 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Newmarket well supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
NIAGARA FALLS WATER PLANT
1998 AND 1999 REPORT

The Niagara Falls Water Plant is a conventional treatment plant which treats water from the Niagara River at the junction of the Welland River. The process consists of coagulation, flocculation, sedimentation, filtration using granular activated carbon (GAC) media and disinfection. Powder activated carbon is added for taste and odour control as required. Sodium hypochlorite is added at the mouth of the intake structure for zebra mussel control. This plant has a rated capacity of 145 x 1000 m^3/day and serves a population of approximately 88,078.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 2,445 tests were performed on up to 200 inorganic, organic and radiological parameters.

Turbidity was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 1.0 NTU in one treated water sample. Turbidity interferes with disinfection and with the maintenance of an adequate level of chlorine in the distribution system. Municipalities are advised to review bacteriological monitoring results for the treated water and distribution system water to ensure that they meet the Ontario Drinking Water Objectives.

No other health related ODWOs were exceeded.

The Niagara Falls Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
NIPIGON WATER PLANT
1998 AND 1999 REPORT

The Nipigon Water Plant partially treats water from the Nipigon River. Raw water is pre-chlorinated, pumped through sand filters and then disinfected with calcium hypochlorite. This plant has a design capacity of 1.89 x 1000 m^3/day and serves a population of approximately 1,500.

Raw and treated water at the plant and water at one location in the distribution system were sampled. A total of 2,270 tests were performed on up to 200 inorganic, organic and radiological parameters.

Turbidity was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 1.0 NTU in three treated water samples. Turbidity interferes with disinfection and with the maintenance of an adequate level of chlorine in the distribution system. Municipalities are advised to review bacteriological monitoring results for the treated water and distribution system water to ensure that they meet the Ontario Drinking Water Objectives.

No other health related ODWOs were exceeded.

The elevated results for colour, dissolved organic carbon and turbidity in the treated water can be attributed to the lack of chemically assisted filtration at this facility.

The Nipigon Water Treatment Plant, for the sample years 1998 and 1999, produced adequate quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
NORTH BAY WATER PLANT
1998 AND 1999 REPORT

The North Bay Water Plant is a pumping station which partially treats water from Trout Lake. The process consists of pH adjustment, fluoridation and disinfection. The plant has a rated capacity of 79.5 x 1000 m^3/day and serves a population of approximately 52,500.

Raw and treated water at the plant and at three locations in the distribution system were sampled. A total of 1,914 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The North Bay Water Plant, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
NORWICH WELL SUPPLY
1998 AND 1999 REPORT

The Norwich well supply is a groundwater source consisting of three wells. Water is treated with sodium silicate for iron removal and chlorine for disinfection. The maximum pumping capacity of the system is 3.273 x 1,000 m^3/day and serves a population of approximately 2,600.

Raw water at the three wells and water at two locations in the distribution system were sampled. A total of 1,352 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The numerous minerals and salts detected above aesthetic objectives is characteristic of many groundwater sources.

The Norwich well supply, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
OAKVILLE WATER PLANT
1998 AND 1999 REPORT

The Oakville Water Plant is a conventional treatment plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. Chlorine is added at the mouth of the intake structure for zebra mussel control. Ammonia is added to the disinfection process to convert free chlorine to a combined (chloramine) residual and sulphur dioxide is added to remove the excess chlorine. This plant has a design capacity of 109 x 1000 m^3/day and serves a population of approximately 120,000.

Raw and treated water at the plant and water at one location in the distribution system were sampled. A total of 1075 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Oakville Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
ODESSA WATER PLANT
1998 AND 1999 REPORT

The Odessa Water Plant is a conventional treatment plant which treats water from Millhaven Creek. The treatment process consists of coagulation, flocculation, clarification (upflow clarifier), filtration, and disinfection. Granular activated carbon (GAC) contactors are part of the treatment process. This plant has a design capacity of 0.81 x 1000 m^3/day and serves a population of approximately 900.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 4,547 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Odessa Water Plant, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
OHSWEKEN WATER PLANT
1998 AND 1999 REPORT

The Ohsweken Water Plant is a conventional treatment package plant which treats water from the Grand River. The process consists of coagulation, flocculation, sedimentation, filtration and disinfection. An Ultra Violet (UV) irradiation unit was installed to prevent the formation of N-Nitrosodimethylamine (NDMA). This plant has a design capacity of 1.04 x 1000 m^3/day and serves a population of approximately 2,000.

Raw and treated water at the plant and at one location in the distribution were sampled. A total of 4,415 tests were performed on up to 200 inorganic, organic and radiological parameters.

Turbidity was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 1.0 NTU in one treated water sample. Turbidity interferes with disinfection and with the maintenance of an adequate level of chlorine in the distribution system. Municipalities are advised to review bacteriological monitoring results for the treated water and distribution system water to ensure that they meet the Ontario Drinking Water Objectives.

NDMA (N-Nitrosodimethylamine) was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 0.009• g/L in one treated water sample.

No other health related ODWOs were exceeded.

The detection of certain pesticides at the Ohsweken Water Plant indicates that this raw water source is influenced by agricultural activity. These results were similar to those reported in previous years.

The Ohsweken Water Plant, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
ORANGEVILLE WELL SUPPLY
1998 AND 1999 REPORT

The Orangeville well supply is a ground water source containing 13 wells . The treatment processes consists of the addition of sodium silicate for iron sequestering and chlorine for disinfection. The maximum pumping capacity of the system is 24.58 x 1000 m^3/day and serves a population of approximately 23,500.

Raw water from seven wells, treated water from two reservoirs and two locations in the distribution system were sampled. A total of 1,648 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Orangeville well supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
ORILLIA WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The Orillia Water Supply System includes two raw water sources: Lake Couchiching and groundwater source from two wells. The lake water is treated using a conventional treatment process consisting of coagulation, flocculation, sedimentation, filtration and disinfection. This plant has a rated capacity of 27.27 x 1000 m^3/day. The two wells are located adjacent to the treatment plant and groundwater is pumped directly from the wells to the clear well in the plant and mixed before disinfection. The mixed water is pumped into the distribution system. The wells supply up to 25% of the total demand of the system. The Orillia water supply system serves a population of approximately 25,000.

Raw and treated water at the plant, raw water from the two wells, treated mixed water and treated water from one location in the distribution system were sampled. A total of 3,261 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The detection of certain volatile organic compounds in specific wells is consistent with results reported in previous years.

The Orillia Water Supply System, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
OSHAWA WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The Oshawa Water Plant is a conventional treatment plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. Chlorine is added at the mouth of the intake structure for zebra mussel control. This plant has a rated capacity of 136 x 1000 m^3/day and serves a population of approximately 173,200.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 979 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Oshawa water supply system, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
OTTAWA (BRITANNIA) WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The Ottawa (Britannia) Water Plant is a conventional treatment plant which treats water from the Ottawa River. The process consists of coagulation, flocculation, sedimentation, filtration, pH adjustment, fluoridation and disinfection. Ammonia is used in the disinfection process to convert free chlorine to a combined (chloramine) residual. This plant has a rated capacity of 350 x 1000 m^3/day. The Ottawa (Britannia) water supply system, together with the Ottawa (Lemieux Island) plant, serves a population of approximately 700,000.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 1,539 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Ottawa (Britannia) Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
OTTAWA (LEMIEUX ISLAND) WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The Ottawa (Lemieux Island) Water Plant is a conventional treatment plant which treats water from the Ottawa River. The process consists of coagulation, flocculation, sedimentation, filtration, pH adjustment, fluoridation and disinfection. Ammonia is used in the disinfection process to convert free chlorine to a combined (chloramine) residual. This plant has a design capacity of 298 x 1000 m^3/day. The Ottawa (Lemieux Island) water supply system together with the Ottawa (Britannia) plant serve a population of approximately 700,000.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 1,472 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Ottawa (Lemieux Island) Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
OTTERVILLE WELL SUPPLY
1998 AND 1999 REPORT

The Otterville well supply is a groundwater source consisting of three wells. The water is treated with chlorine for disinfection. The maximum pumping capacity of the system is 1.833 x 1,000 m^3/day and serves a population of approximately 950.

Raw water from three wells and treated water at two locations in the distribution system were sampled. A total of 1,054 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Otterville well supply, for the sample years 1998 and 1999, generally produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
OWEN SOUND (R N NEATH) WATER PLANT
1998 AND 1999 REPORT

The Owen Sound (R N Neath) Water Plant is a direct filtration plant which treats water from Georgian Bay. The treatment process consists of coagulation, flocculation, filtration, fluoridation and disinfection. This plant has a design capacity of 60.4 x 1000 m^3/day and serves a population of approximately 22,000.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,043 tests were performed on up to 2ᴄJ inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Owen Sound (R N Neath) Water Plant , for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
PAISLEY WATER PLANT
1998 AND 1999 REPORT

The Paisley Water Plant is a conventional treatment plant which treats water from the Teeswater River. The process consists of coagulation, flocculation, sedimentation (upflow clarifier), filtration and disinfection. Activated silica is used as a coagulant aid. This plant has a rated capacity of 1.630 x 1000 m^3/day and serves a population of approximately 1,100.

Raw and treated water at the plant and water at one location in the distribution system were sampled. A total of 4,557 were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Paisley Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
PEMBROKE WATER PLANT
1998 AND 1999 REPORT

The Pembroke Water Plant is a conventional treatment plant which treats water from the Ottawa River. The process consists of alkalinity adjustment, coagulation, flocculation, sedimentation, filtration, pH adjustment and disinfection. This plant has a design capacity of 32.7 x 1000 m^3/day and serves a population of approximately 20,000.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 2,355 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Pembroke Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
PENETANGUISHENE WELL SUPPLY
1998 AND 1999 REPORT

The Penetanguishene Well Supply is a groundwater source consisting three wells. The water is treated with chlorine for disinfection. The maximum pumping capacity of the system is 11.6 x 1000 m^3/day and serves a population of approximately 7,200.

Raw water from three wells, treated water from the reservoir and at one location in the distribution system were sampled. A total of 2,499 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Penetanguishene Well Supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
PERTH WATER PLANT
1998 AND 1999 REPORT

The Perth Water Plant is a conventional treatment plant which treats water from the Tay River. The process consists of coagulation, flocculation, sedimentation, filtration, pH adjustment, and disinfection. Powder activated carbon is added for taste and odour control when required and chlorine dioxide is generated on site to provide an initial disinfection. This plant has a design capacity of 9.1 x 1000 m^3/day and serves a population of approximately 6,000.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 2,201 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Perth Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
PETERBOROUGH WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The Peterborough Water Plant is a conventional treatment plant which treats water from the Otonabee River. The process consists of coagulation, flocculation, sedimentation, filtration using granular activated carbon (GAC) media, fluoridation , pH adjustment and disinfection. Chlorine is added at the mouth of the intake structure for zebra mussel control. This plant has a rated capacity of 104 x 1000 m^3/day and serves a population of approximately 70,000.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 2,296 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Peterborough Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
PICTON WATER PLANT
1998 AND 1999 REPORT

The Picton Water Plant is a conventional treatment plant which treats water from the Bay of Quinte. The process consists of coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. Chlorine is added at the mouth of the intake structure for zebra mussel control. Powder activated carbon is added for taste and odour control. This plant has a design capacity of 10.9 x 1000 m^3/day and serves a population of approximately 5,000.

Raw and treated water at the plant and at three locations in the distribution system were sampled. A total of 1,639 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Picton Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
PLANTAGENET WATER PLANT
1998 AND 1999 REPORT

The Plantagenet Water Plant is a conventional treatment plant which treats water from the South Nation River. The treatment process consists of coagulation, flocculation, sedimentation, filtration, pH adjustment and disinfection. Powder activated carbon is added for taste and odour control. This plant has a design capacity of 1.7 x 1000 m^3/day and serves a population of approximately 850.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 4,753 tests were performed on up to 200 inorganic, organic and radiological parameters.

No other health related ODWOs were exceeded.

The detection of certain pesticides at the Plantagenet Water Plant indicates that this raw water source is influenced by agricultural activity. The results were similar to those reported in previous years.

The Plantagenet Water Plant, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
PORT COLBORNE WATER PLANT
1998 AND 1999 REPORT

The Port Colborne Water Plant is a conventional treatment plant which treats water from Lake Erie. The process consists of coagulation, flocculation, sedimentation, filtration with granular activated carbon (GAC) media, and disinfection. This plant has a design capacity of 45 x 1000 m^3/day and serves a population of approximately 18,000.

Raw and treated water at the plant and at one location in the distribution system was sampled. A total of 1,553 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Port Colborne Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
PORT DOVER WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The Port Dover Water Supply System is a conventional Water Plant which treats water from Lake Erie. The treatment process consists of coagulation, flocculation, sedimentation, filtration and disinfection. Chlorine is added at the mouth of the intake structure for zebra mussel control. This plant has a design capacity of 12.8 x 1000 m^3/day and serves a population of approximately 5,400.

Raw and treated water at the plant and at two locations in the distribution were sampled. A total of 1,128 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Port Dover water supply system, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
PORT ELGIN WATER PLANT
1998 AND 1999 REPORT

The Port Elgin Water Plant is a conventional treatment plant which treats water from Lake Huron. The process consists of coagulation, flocculation, clarification (upflow clarifier), fluoridation, and disinfection. Chlorine is added at the mouth of the intake structure for zebra mussel control. This plant has a rated capacity of 8.7 x 1000 m^3/day and serves a population of approximately 6,800.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,582 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Port Elgin Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
PORT HOPE WATER PLANT
1998 AND 1999 REPORT

The Port Hope Water Plant is a conventional treatment plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, sedimentation, filtration, and disinfection. Chlorine is added at the mouth of the intake structure for zebra mussel control. This plant has a design capacity of 29.1 x 1000 m^3/day and serves a population of approximately 11,600.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 1,544 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Port Hope Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
PORT PERRY WELL SUPPLY
1997, 1998 AND 1999 REPORT

The Port Perry Well Supply is a groundwater source consisting of three wells. Raw water is treated with sodium silicate for iron sequestering and chlorine for disinfection. The capacity maximum pumping capacity of the system is 3.41 x 1000 m3/day and serves a population of 4,700.

Raw water at three wells, treated water from the reservoir and at one location in the distribution system was sampled. One sample in 1997 which was not reported previously is included in this report. A total of 2,188 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Port Perry well supply, for the sample years 1997, 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
PORT ROWAN WATER PLANT
1998 AND 1999 REPORT

The Port Rowan Water Plant is a conventional treatment package plant which treats water from Lake Erie. The process consists of coagulation, flocculation, sedimentation, filtration, and disinfection. Granular activated carbon (GAC) contactors are used in addition to the dual media filters during the summer months. This plant has a design capacity of 3.0 x 1000 m^3/day and serves a population of approximately 1,280.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 1,534 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Port Rowan Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
PRESCOTT WATER PLANT
1998 AND 1999 REPORT

The Prescott Water Plant is a direct filtration plant which treats water from the St. Lawrence River. The process consists of coagulation, flocculation, filtration, fluoridation and disinfection. Chlorine dioxide is generated on site to provide initial disinfection. This plant has a design capacity of 8.2 x 1000 m^3/day serves a population of approximately 4,300.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,772 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Prescott Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
RAINY RIVER WATER PLANT
1998 AND 1999 REPORT

The Rainy River Water Plant is a conventional treatment package plant which treats water from Rainy River. The process consists of coagulation, flocculation, sedimentation, filtration, pH adjustment and disinfection. This plant has a rated capacity of 1.4 x 1000 m^3/day and serves a population of approximately 1,000.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 2,498 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Rainy River Water Plant, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
RED LAKE WATER PLANT
1998 AND 1999 REPORT

The Red Lake Water Plant is a conventional treatment package plant which water from Red Lake. The treatment process consists of alkalinity adjustment, coagulation, flocculation, sedimentation including plate settlers, filtration, pH adjustment and disinfection. The plant has a design capacity of 4.36 x1000 m^3/day and serves a population of approximately 2,200.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 2,010 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Red Lake Water Plant, for the sample period of 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
RED ROCK WATER PLANT
1998 AND 1999 REPORT

The Red Rock Water Plant is a conventional treatment plant which treats water from Lake Superior. The process consists of coagulation, flocculation, clarification (upflow solids contact clarifier), filtration, post pH adjustment, fluoridation and disinfection. This plant has a design capacity of 3.0 x 1000 m^3/day and serves a population of approximately 1,400.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,514 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Red Rock Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
RENFREW WATER PLANT
1998 AND 1999 REPORT

The Renfrew Water Plant is a conventional treatment plant which treats water from the Bonnechere River. The process consists of coagulation, flocculation, sedimentation, filtration, pH adjustment, fluoridation and disinfection. This plant has a design capacity of 17.0 x 1000 m^3/day and serves a population of approximately 7,900.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 1,514 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Renfrew Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
ROCKLAND WATER PLANT
1998 AND 1999 REPORT

The Rockland Water Plant is a conventional treatment plant which treats water from the Ottawa River. The process consists of coagulation, flocculation, clarification (upflow clarifier), filtration, pH adjustment and disinfection. This plant has a design capacity of 7.3 x 1000 m^3/day and serves a population of approximately 7,700.

Raw and treated water at the plant and at three locations in the distribution system were sampled. A total of 2,269 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Rockland Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
SARNIA (LAMBTON AREA) WATER PLANT
1998 AND 1999 REPORT

The Sarnia (Lambton Area) Water Plant is a direct filtration plant which treats water from the St. Clair River. The process consists of coagulation, flocculation, filtration, disinfection and fluoridation. Powder activated carbon is added for taste and odour control. This plant has a design capacity of 454 x 1000 m^3/day and serves a population of approximately 120,000.

Raw and treated water at the plant and water at three locations in the distribution system were sampled. A total of 2,141 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Sarnia (Lambton Area) Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
SAULT STE. MARIE WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The Sault Ste. Marie water supply system has two raw water sources: surface water from Lake Superior and groundwater from 4 wells. The Sault Ste. Marie Water Plant is a direct filtration plant which treats water from Lake Superior. The process consists of coagulation, flocculation, filtration, and disinfection. Ammonia was used in the disinfection process to convert free chlorine to a combined (chloramine) residual. This plant has a rated capacity of 20.8 x 1000 m^3/day. Groundwater from four wells is disinfected and pumped into the distribution system. The groundwater source provides up to 50% of the total water demand. The distribution system is a mixture of water supplied by the treatment plant and the groundwater supply. The Sault Ste. Marie Water Supply System serves a population of approximately 85,000.

Raw and treated water at the plant along with raw water from four wells and treated water from three wells and at two locations in the distribution system were sampled. A total of 2,939 tests on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Sault Ste. Marie Water Plant together with the well supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
SIMCOE WELL SUPPLY
1998 AND 1999 REPORT

The Simcoe well supply is a groundwater source consisting of eight wells. Water is treated with sodium silicate for iron sequestering. The water is fluoridated and chlorine is added for disinfection. This system has a maximum pumping capacity of 12.5 x 1000 m^3/day and serves a population of approximately 13,800.
Raw water from three wells, treated water from the reservoir and at two locations in the distribution system were sampled. A total of 1,849 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The numerous minerals and salts detected above aesthetic objectives is characteristic of many ground water sources.

The detection of certain volatile organic compounds in specific wells and the reservoir is consistent with results reported in previous years.

The Simcoe well supply, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
SIOUX LOOKOUT WATER PLANT
1997, 1998 AND 1999 REPORT

The Sioux Lookout Water Plant is a recently constructed micro filtration plant, commissioned in May 1999, and treats water from Pelican Lake. The process consists of coagulation, pH adjustment, micro filtration using a micro filter membrane, fluoridation and disinfection. This plant has a rated capacity of 52.0 x 1000 m^3/day and serves a population of approximately 4,700.

Prior to May 1999, raw water from Pelican Lake was disinfected with chlorine and pumped directly into the distribution. A boil water order was in effect from April 1997 and was removed at the start up of the new treatment facility.

This report discusses analytical results from samples taken before and after the new treatment plant became operational.

Raw and treated water at the plant and at one location in the distribution system were sampled. One sample in 1997 which was not reported previously is included in this report. A total of 2059 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Sioux Lookout Water Plant, for the sample years 1997 and 1998 produced acceptable quality water. A boil water order was in effect.

From March 1999, the new microfiltration plant produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
SMITHS FALLS WATER PLANT
1998 AND 1999 REPORT

The Smiths Falls Water Plant is a conventional treatment plant which treats water from the Rideau River. The process consists of coagulation, flocculation, sedimentation, filtration with granular activated carbon (GAC) media, fluoridation and disinfection. This plant has a design capacity of 18.1 x 1000 m^3/day and serves a population of approximately 10,700.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 2,059 tests were performed on up to 200 inorganic, organic and radiological parameters.

Turbidity was detected above the Ontario Drinking Water Objective(ODWO) Maximum Acceptable Concentration (MAC) of 1.0 NTU in one treated water sample. Turbidity interferes with disinfection and with the maintenance of an adequate level of chlorine in the distribution system. Municipalities are advised to review bacteriological monitoring results for the treated water and distribution system to ensure they meet the Ontario Drinking water Objectives.

Lead was detected above the Ontario Drinking Water Objective(ODWO) Maximum Acceptable Concentration (MAC) of 10.0 ug/l in one distribution system water sample. Subsequent samples showed the lead level to be below the objective. Household taps should be sufficiently flushed, until the coolest water temperature is obtained, before the water is used for consumption.

No other health related ODWOs were exceeded.

The Smiths Falls Water Plant, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
SMOOTH ROCK FALLS WATER PLANT
1998 AND 1999 REPORT

The Smooth Rock Falls Water Plant is a conventional treatment package plant which treats water from the Mattagami River. The process consists of pre pH adjustment, coagulation, flocculation, sedimentation, filtration, pH adjustment fluoridation and disinfection. This plant has a rated capacity of 3.00 x 1000 m^3/day and serves a population of approximately 1,900.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,605 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Smooth Rock Falls Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
SOUTHAMPTON WATER PLANT
1998 AND 1999 REPORT

The Southampton Water Plant is a conventional treatment plant which treats water from Lake Huron. The process consists of coagulation, flocculation, clarification (upflow clarifier), filtration, and disinfection. This plant has a design capacity of 6.3 x 1000 m^3/day and serves a population of approximately 4,800.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 1,579 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Southampton Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
SOUTH PEEL (LAKEVIEW) WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The South Peel (Lakeview) Water Plant is a conventional treatment plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. Chlorine is added at the mouth of the intake structure for zebra mussel control. Ammonia is used in the disinfection process to convert free chlorine to a combined (chloramine) residual and sulphur dioxide is used to remove excess chlorine. This plant has a rated capacity of 600 x 1000 m^3/day. The South Peel (Lakeview) Water Plant, together with the Lorne Park Water Plant serves a population of approximately 870,000.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,060 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The South Peel (Lakeview) water supply system, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
SOUTH PEEL (LORNE PARK) WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The South Peel (Lorne Park) Water Plant is a conventional treatment plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. Sodium hypochlorite is added at the mouth of the intake structure for zebra mussel control. This plant has a design capacity of 236 x 1000 m^3/day. The South Peel (Lorne Park) water supply system, together with the Lakeview Water Plant, serve a population of approximately 870,000.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 844 tests were performed on 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The South Peel (Lorne Park) water supply system, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
STONEY POINT (TILBURY NORTH) WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The Stoney Point (Tilbury North) Water Plant is a conventional treatment plant which treats water from Lake St. Clair. The process consists of coagulation, flocculation, clarification (upflow clarifier), filtration, fluoridation and disinfection. Chlorine is added at the mouth of the intake structure for zebra mussel control This plant has a rated capacity of 4.545 x 1000 m^3/day and serves a population of approximately 3,500.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 2,190 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Stoney Point (Tilbury North) water supply system, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
STOUFFVILLE WELL SUPPLY
1998 AND 1999 REPORT

The Stouffville well supply is a groundwater source consisting of three wells. Water from one well is treated with sodium silicate for iron sequestering and chlorine is added for disinfection. This supply has a maximum pumping capacity of 7.430 x 1000 m^3/day and serves a population of approximately 14,300.

Raw water from three wells, treated water from the water tower and at one location in the distribution system were sampled. A total of 1,489 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The numerous minerals and salts detected above aesthetic objectives in one well is characteristic of many ground water sources.

The Stouffville well supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
STRATFORD WELL SUPPLY
1998 AND 1999 REPORT

The Stratford well supply has a groundwater source consisting of 12 wells. The water is treated with sodium silicate for iron sequestering and chlorine is added for disinfection. Aeration is provided at two wells for removal of hydrogen sulphide. This system has a maximum pumping capacity of 39.495 x 1000 m^3/day and serves a population of approximately 29,000.

Raw water from seven wells, treated water from one well and two reservoirs and at one location in the distribution system were sampled. A total of 1,748 tests were performed on up to 200 inorganic, organic and radiological parameters.

Fluoride was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 1.5 mg/L in a treated and distributed water sample in one sample event. The fluoride is naturally occurring.

No other health related ODWOs were exceeded.

The numerous minerals and salts detected above aesthetic objectives is characteristic of many ground water sources.

The Stratford well supply, for the sample years 1998 and 1999, produced good quality and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
ST. CATHARINES (DE CEW) WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The St. Catharines (De Cew) Water Plant is a conventional treatment plant which treats water from the Welland Canal. The process consists of coagulation, flocculation, sedimentation, filtration using granular activated carbon (GAC) media, and disinfection. Chlorine is added at the mouth of the intake structure for zebra mussel control. Powder activated carbon is added for taste and odour control. This plant has a design capacity of 227.350 x 1000 m^3/day and serves a population of approximately 161,200.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 2,163 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The St. Catharines (De Cew) Water Supply System, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
ST. PASCAL WELL SUPPLY
1998 AND 1999 REPORT

The St. Pascal well supply is a groundwater source consisting of two wells. The treatment process uses physical/chemical treatment and disinfection. Hydrogen peroxide is added to the raw water to inhibit the biological growth associated with the high organic carbon content. The water is aerated and pumped through two granular activated carbon (GAC) contactors (filters) and chlorine is added for disinfection. Ammonium sulphate is used to convert the free chlorine to a combined (Chloramine) residual to reduce the formation of disinfection by-products. The maximum pumping capacity of the system is 0.492 x 1000 m^3/day and serves a population of approximately 450.

Samples were taken of raw water from the well, after the addition of hydrogen peroxide, after the first GAC contactor, after the second GAC contactor, treated water from the reservoir and at two locations in the distribution system. A total of 2,980 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The number parameters detected above aesthetic objectives indicates the raw water source for the St. Pascal Well Supply is of poor quality.

The St. Pascal Well Supply, for the sample years of 1998 and 1999, produced acceptable quality water and this was maintained in the distribution

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
ST. THOMAS (ELGIN) WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The St. Thomas (Elgin) Water Plant is a conventional treatment plant which treats water from Lake Erie. The process consists of coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. Powder activated carbon and potassium permanganate are added for taste and odour control. Sodium hypochlorite is added at the mouth of the intake for zebra mussel control. This plant has a design capacity of 82.000 x 1000 m^3/day and serves a population of approximately 94,500 including the south end of the City of London.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,646 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The St. Thomas (Elgin) Water Supply System, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
SUDBURY (DAVID ST.) WATER PLANT
1998 AND 1999 REPORT

The Sudbury (David St.) Water Plant is a pumping station which partially treats Water from Ramsey Lake. The treatment process consists of micro strainers, pH adjustment, fluoridation, and disinfection. A poly phosphate is added as a corrosion inhibitor. This plant has a design capacity of 34.0 x 1000 m^3/day. The Sudbury (David St.) Water Plant together with the Sudbury (Wanapitei) Water Plant serves a population of approximately 95,500.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,901 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Sudbury (David St.) Water Plant, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
SUDBURY (WANAPITEI) WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The Sudbury (Wanapitei) Water Plant is a direct filtration plant which treats water from the Wanapitei River. The process consists of coagulation, flocculation, filtration, post pH adjustment and disinfection. Chlorine dioxide is generated on site and is used in the summer for taste and odour control. A polyphosphate is added as a corrosion inhibitor. This plant has a rated capacity of 54.0 x 1000 m^3/day. The Sudbury (Wanapitei) Water Plant together with the Ramsey Lake (David Street pumping Station) serves a population of approximately 95,500.

Raw and treated water at the plant and water at locations in the distribution system were sampled. A total of 2,453 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Sudbury (Wanapitei) Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
SUNDERLAND WELL SUPPLY
1997, 1998 AND 1999 REPORT

The Sunderland Well Supply is a groundwater source consisting of two wells. Water is treated with sodium hypochlorite for disinfection. The maximum pumping capacity of the system is 2.090 x 1000 m3/day and serves a population of approximately 873.

Raw water at two wells, treated water from the standpipe and at one location in the distribution system were sampled. One sample in 1997 which was not reported previously is included in this report. A total of 1,692 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The numerous minerals and salts detected above aesthetic objectives is characteristic of many ground water sources.

The Sunderland well supply, for the sample years 1997, 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
TECUMSEH WATER PLANT
1998 AND 1999 REPORT

The Tecumseh Water Plant is a conventional treatment plant which treats water from the Detroit River. The process consists of coagulation, flocculation, clarification (upflow solids contact clarifier), filtration, fluoridation and disinfection. Powder activated carbon is added for taste and odour control. This plant has a rated capacity of 25.01 x 1000 m^3/day and serves a population of approximately 17,800.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 2,138 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Tecumseh Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
TERRACE BAY WATER PLANT
1998 AND 1999 REPORT

The Terrace Bay Water Plant is a privately owned facility which supplies water to a pulp mill on the north shore of Lake Superior at Terrace Bay. The plant is a pumping station which partially treats water from Lake Superior. The water is treated with Chlorine for disinfection. A distribution main, connected to the transmission line to the pulp mill, supplies water to the town of Terrace Bay and serves a population of approximately 2,600.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 760 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Terrace Bay Water Plant, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
THAMESVILLE WELL SUPPLY
1998 AND 1999 REPORT

The Thamesville well supply is a groundwater source consisting of two wells. Potassium permanganate is added to the raw water which is pumped through two manganese green sand pressure filters for iron/manganese removal and chlorine is added for disinfection. This plant has a design capacity of 1.3 x 1000 m^3/day and serves a population of approximately 1,000.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 865 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Thamesville well supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
THUNDER BAY (BARE POINT) WATER PLANT
1998 AND 1999 REPORT

The Thunder Bay (Bare Point) Water Plant is a direct filtration plant which treats water from Lake Superior. The process consists of coagulation, flocculation, filtration and disinfection. This plant has a design capacity of 91.0 x 1000 m^3/day and services the north ward of Thunder Bay. The Thunder Bay (Bare Point) Water Plant together with The Thunder Bay (Loch Lomond) facility serves a population of 112,000.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 1,248 tests were performed on up to 200 inorganic, organic and radiological parameters.

Lead was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 10 •g/L in two distribution system water samples at the same location. Household taps should be sufficiently flushed, until the coolest water temperature is obtained, before water is used for consumption. The problem with elevated lead levels, at some sites in the distribution, is being addressed by the City of Thunder Bay.

No other health related ODWOs were exceeded.

The Thunder Bay (Bare Point) Water Plant, for the sample years 1998 and 1999, produced good quality water. The water quality deteriorated, at some locations, in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
THUNDER BAY (LOCH LOMOND) WATER PLANT
1998 AND 1999 REPORT

The Thunder Bay (Loch Lomond) Water Plant is a recently constructed temporary microfiltration plant, commissioned in November 1998, which treats water from Loch Lomond. The process consists of microfiltration using a micro filter membrane, the addition of sodium silicate for corrosion control and chlorine is added for disinfection. This plant has a design capacity of 11.363 x 1000 m^3/day and services the south ward of Thunder Bay. The Thunder Bay (Loch Lomond) Water Plant together with the Thunder Bay (Bare Point) Water Plant serves a population of approximately 112,000

Prior to November 1998, raw water from Loch Lomond was disinfected and pumped directly into the distribution. A boil water order was in effect from October 1997 and was removed at the start up of the new treatment facility.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 2,065 tests were performed on up to 200 inorganic, organic and radiological parameters.

Lead was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 10 • g/L in two distribution system water samples at the same location. Household taps should be sufficiently flushed, until the coolest water temperature is obtained, before water is used for consumption. The problem with elevated lead levels at some sites in the distribution is being addressed by the City of Thunder Bay.

No other health related ODWOs were exceeded.

The Thunder Bay (Loch Lomond) Water Plant, for the sample year 1998 produced acceptable quality water. A boil water order was in effect.

From November 1998 and the sample year 1999, the new micro filtration plant produced good quality water. The water quality deteriorated ,at some locations, in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
TILBURY WATER PLANT
1998 AND 1999 REPORT

The Tilbury Water Plant is a conventional treatment plant which treats water from Lake St. Clair. The process consists of coagulation, flocculation, clarification (upflow clarifier), filtration (pressure filters), powder activated carbon for taste and odour control, fluoridation and disinfection. Polyphosphate is added for corrosion control. Chlorine is added at the mouth of the intake structure for zebra mussel control. This plant has a rated capacity of 6.818 x 1000 m^3/day and serves a population of approximately 6,100.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 2,296 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Tilbury Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
TILLSONBURG WELL SUPPLY
1998 AND 1999 REPORT

The Tillsonburg well supply is a groundwater source consisting of 10 wells. The water is treated with sodium silicate for iron sequestering and chlorine is added for disinfection. Two wells are aerated for removal of hydrogen sulphide. The maximum pumping capacity of the system is 14.7 x 1,000 m^3/day serves a population of approximately 14,200.

Raw water from six wells, treated water from two wells and two locations in the distribution system were sampled. A total of 2,038 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The numerous minerals and salts detected above aesthetic objectives is characteristic of many ground water sources.

The Tillsonburg well supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
TORONTO (F. J. HORGAN) WATER PLANT
1998 AND 1999 REPORT

The Toronto (F. J. Horgan) Water Plant is a direct filtration plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, filtration, fluoridation and disinfection. Ammonia is added to the disinfection process to convert the free chlorine into a combined (chloramine) residual and sulphur dioxide is added to remove excess chlorine. Powder activated carbon is added for taste and odour control when required. This plant has a rated capacity of 550 x 1,000 m^3/day. The F. J. Horgan Water Plant, together with the other Toronto plants (R.L. Clark, R.C. Harris and the Island Plant) serve a population of approximately 2,333,300.

Raw and treated water at the plant and water at one location in the distribution system were sampled. A total of 1,074 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Toronto (F. J. Horgan) Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
TORONTO (R. C. HARRIS) WATER PLANT
1998 AND 1999 REPORT

The Toronto (R. C. Harris) Water Plant is a conventional treatment plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. Ammonia is used in the disinfection process to convert free chlorine to a combined (chloramine) residual and sulphur dioxide is used to remove the excess chlorine. This plant has a design capacity of 1,000 x 1000 m^3/day. The R. C. Harris Water Plant together with the other Toronto plants (R.L. Clark, F.J. Horgan and the Island Plant) serves a population of approximately 2,333,300.

Raw and treated water at the plant and at one location in the distribution were sampled. A total of 739 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Toronto (R. C. Harris) Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
TORONTO (R. L. CLARK) WATER PLANT
1998 AND 1999 REPORT

The Toronto (R. L. Clark) Water Plant is a conventional treatment plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. Ammonia is used in the disinfection process to convert free chlorine into a combined (chloramine) residual and sulphur dioxide is used to remove the excess chlorine. Powder activated carbon is added for taste and odour control when required. This plant has a rated capacity of 659 x 1000 m^3/day. The R. L. Clark Water Plant together with the other Toronto plants (F.J. Horgan R.C. Harris and the Island Plant), serves a population of approximately 2,333,300.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,070 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Toronto (R. L. Clark) Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
TORONTO (TORONTO ISLAND) WATER PLANT
1998 AND 1999 REPORT

The Toronto (Island) Water Plant is a seasonal plant that operates during the summer. It is a direct filtration plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, filtration, fluoridation and disinfection. Ammonia is used in the disinfection process to convert free chlorine into a combined (chloramine) residual and sulphur dioxide is used to remove excess chlorine. This plant has a design capacity of 409 x 1000 m^3/day. The Island Water Plant together with the other Toronto plants,(F. J. Horgan, R.C. Harris and the R. L. Clark Plant) serves a population of approximately 2,333,300.

Raw and treated water at the plant and at one location in the distribution was sampled. A total of 709 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Toronto (Island) Water Treatment Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
TRENTON WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The Trenton Water Supply System has two raw water sources: Surface water from the Trent River and groundwater from 2 wells and a spring infiltration system.

The Trenton Water plant is a conventional treatment plant which treats water from the Trent River. The process consists of coagulation, flocculation, sedimentation, filtration, and disinfection. This plant has a design capacity of 35.0 x 1000 m^3/day

The Trenton well supply is a groundwater source consisting of 2 wells which are artificially recharged from Tremur Lake and a spring infiltration system. This water is mixed and treated with chlorine for disinfection. The groundwater supplies 20% of the total demand of the system.

The Trenton Water Plant together with the Trenton well supply serves a population of approximately 17,100.

Raw and treated water at the plant, raw and treated water the pumping station and at four location in the distribution system were sampled. A total of 2,763 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Trenton Water Supply System, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
UNION (ESSEX COUNTY) WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The Union Water Plant is a conventional treatment plant which treats water from Lake Erie. The process consists of coagulation, flocculation, clarification, filtration, and disinfection. Powder activated carbon is added for taste and odour control. This plant has a rated capacity of 90.8 x 1000 m^3/day and serves a population of approximately 55,000.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 1,183 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Union water supply system, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
VERMILLION BAY WATER PLANT
1998 AND 1999 REPORT

The Vermillion Bay Water Plant is a pumping station which partially treats water from Eagle Lake. The process consists of the addition of chlorine for disinfection. This plant has a rated capacity of 1.363 x 1000 m^3/day and serves a population of approximately 550.

Treated water at the plant and at one location in the distribution system were sampled. A total of 1,151 tests were performed on up to 200 inorganic, organic and radiological parameters.

Turbidity was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 1.0 NTU in two treated water samples. Turbidity interferes with disinfection and with the maintenance of an adequate level of chlorine in the distribution system. Municipalities are advised to review bacteriological monitoring results for the treated water and distribution system water to ensure that they meet the Ontario Drinking Water Objectives.

No other health related ODWOs were exceeded.

The Vermillion Bay Water Plant, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
WALLACEBURG WATER PLANT
1998 AND 1999 REPORT

The Wallaceburg Water Plant is a conventional treatment plant which treats water from the St. Clair River via the Chenal Escarte. The process consists of coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. Powder activated carbon is added for taste and odour control when required. This plant has a rated capacity of 18.2 x 1000 m^3/day and serves a population of approximately 11,300.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 1,800 tests were performed on up to 200 inorganic, organic and radiological parameters.

Lead was detected above the Ontario Drinking Water Objective (ODWO) Maximum Acceptable Concentration (MAC) of 10.0 ug/L in one distribution system water sample. Subsequent samples showed the lead level to be well below the objective. Household taps should be sufficiently flushed, until the coolest water temperature is obtained, before water is used for consumption.

No other health related ODWOs were exceeded.

The Wallaceburg Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
WALPOLE ISLAND WATER PLANT
1998 AND 1999 REPORT

The Walpole Island Water Plant is a conventional treatment plant that treats water from St. Clair River. The treatment process consists of coagulation, flocculation, sedimentation, filtration, and disinfection. Powder activated carbon is added on a continuous basis for taste and odour control and for removal of organics. This plant has a rated capacity of 1.96 x 1000 m^3/day and serves a population of approximately 1,900.

Raw and treated water at the plant and at one location in the distribution were sampled. A total of 2,393 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Walpole Island Water plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
WATERLOO WELL SUPPLY
1998 AND 1999 REPORT

The Waterloo well supply is a groundwater source consisting of nine wells serving a large geographical area of the Regional Municipality of Waterloo. The treatment process consists of fluoridation and the addition of sodium hypochlorite for disinfection . The maximum pumping capacity of the system is 24.5 x 1000 m^3/day and serves a population of approximately 82,100.

Raw water from two wells, treated water from two reservoirs, one treated well and two locations in the distribution system were sampled. A total of 2,443 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The numerous minerals and salts detected above aesthetic objectives is characteristic of many groundwater sources.

The Waterloo well supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
WATERFORD WELL SUPPLY
1997, 1998 AND 1999 REPORT

The Waterford Well Supply is a groundwater source consisting of two wells and a spring infiltration system which is used only during high demand in the summer. Raw water at two wells is treated with sodium silicate for iron sequestering and sodium hypochlorite for disinfection. The water collected at the infiltration system is disinfected with sodium hypochlorite. The maximum pumping capacity of the system is 7.101 x 1000 m3/day and serves a population of approximately 2,800.

Raw and treated water from two wells, the infiltration system and treated water at four locations in the distribution system were sampled. One sample in 1997 which was not reported previously is included in this report. A total of 3,101 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Waterford well supply, for the sample years 1997, 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
WAWA WATER PLANT
1998 AND 1999 REPORT

The Wawa Water Plant is a pumping station which partially treats water from Lake Wawa. The treatment process consists of fluoridation and the use of chlorine for disinfection. The plant has a maximum pumping capacity of 25.1 x1000 m^3/day and serves a population of approximately 3,800.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 2,070 tests were performed on up to 200 inorganic, organic and radiological parameters.

No know health related ODWOs were exceeded.

The Wawa Water Plant, for the sample years 1998 and 1999, produced acceptable quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
WELLAND WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The Welland Water Plant is a conventional treatment plant which treats water from Lake Erie via the Welland Canal. The process consists of coagulation, flocculation, sedimentation, filtration with granular activated carbon (GAC) media, fluoridation and disinfection. The plant has a design capacity of 109.1 x 1000 m^3/day and serves a population of approximately 61,817.

Raw and treated water at the plant and at two locations in the distribution system were sampled. A total of 2074 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Welland water supply system, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
WHITBY WATER PLANT
1998 AND 1999 REPORT

The Whitby Water Plant is a direct filtration plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, filtration, fluoridation and disinfection. Chlorine is added at the mouth of the intake structure for zebra mussel control. This plant has a design capacity of 109 x 1000 m^3/day and serves a population of approximately 60,000.

Raw and treated water at the plant and at one location in the distribution system were sampled. A total of 1,093 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Whitby Water Plant, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
WINDSOR WATER SUPPLY SYSTEM
1998 AND 1999 REPORT

The Windsor Water Plant is a conventional treatment plant which treats water from the Detroit River. The process consists of coagulation, flocculation, sedimentation, filtration, fluoridation and disinfection. Powder activated carbon is added for taste and odour control when required. This plant has a rated capacity of 295 x 1000 m^3/day and serves a population of approximately 215,300.

Raw and treated water at the plant and at three locations in the distribution system were sampled. A total of 2,109 tests were performed on up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Windsor water supply system, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM
WOODSTOCK WELL SUPPLY
1998 AND 1999 REPORT

The Woodstock well supply is a groundwater source consisting of 11 wells. Water is treated with chlorine for disinfection. Water from two wells is aerated to remove low levels of hydrogen sulphide, disinfected and pumped through pressure filters. The maximum pumping capacity of the system is 45.5 x 1,000 m^3/day and serves a population of approximately 32,418.

Raw water from three wells, treated water from two highlift pumping stations and at one location in the distribution system were sampled. A total of 1,435 tests were performed for up to 200 inorganic, organic and radiological parameters.

No health related ODWOs were exceeded.

The Woodstock well supply, for the sample years 1998 and 1999, produced good quality water and this was maintained in the distribution system.